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ABSTRACT

The materials in this booklet began as a script for a tape/slide progress report on Project Simu School, to be used in presentations to various groups who have had an interest in the project. The project was developed to create and implement a system to piece together and communicate educational knowledge to enable educators to improve their planning ability. The development of the project, its funding, and its components are outlined. The Chicago component is described as focusing its efforts on the problems unique to the urban community; the Santa Clara County component as working on bettering the planning process in communities moving from rural to urban characteristics; and the Dallas component as utilizing existing computer capability to develop simulation models which will promote better planning, as well as more efficient operation in a variety of school systems. All three components have worked toward the establishment of a National Center for Educational Planning. The appendixes contain a directory of personnel in the various components and the National Advisory Planning Board, as well as a listing of available publications. (Photographs and diagrams may reproduce poorly.) (Author/MLF)

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SIMU SCHOOL: A PATH TOWARD BETTER PLANNING

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EA 006 188

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PROJECT SIMU SCHOOL

ED 093037

SIMU SCHOOL:

A PATH TOWARD BETTER PLANNING

REPORT NUMBER NINETEEN

OF

PROJECT SIMU SCHOOL: SANTA CLARA COUNTY COMPONENT

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FOREWORD

The materials contained herein began as a script for a tape/slide progress report on Project Simu School, to be used in presentations to various groups who have had an interest in the Project. The manner in which the authors prepared the materials suggested that this script could well serve as a printed progress report as well.

Principal authors of the text were Richard Cornish, Technical Writer for the Santa Clara County Component, and Lester W. Hunt, Director of the same Component. The script was reviewed by Mr. Ashraf Manji, Manager of the Chicago Component; Dr. K. Ronald Higgins, Director of the Dallas Component; Dr. Dwayne E. Gardner, Executive Director of the Council of Educational Facility Planners, International; Dr. William Chase, U.S. Office of Education; and members of the staff of the Santa Clara County Component.

Graphics were prepared by Claudia Cornish, consultant to the Santa Clara County Component.

Photographs were supplied by all components to illustrate specific sections of the text.

In the Appendices, the reader will find a directory of personnel in the various components and the National Advisory Planning Board, as well as a listing of publications which are available from CEFP or the components.

We hope that this report will be of interest to you and that you can secure some assistance in planning through use of the tools developed by Project Simu School.

Lester W. Hunt, Director
Project Simu School: Santa Clara County Component

The project presented or reported herein was performed pursuant to a grant from the U.S. Office of Education, Department of Health, Education and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the U.S. Office of Education, and no official endorsement by the U.S. Office of Education should be inferred.

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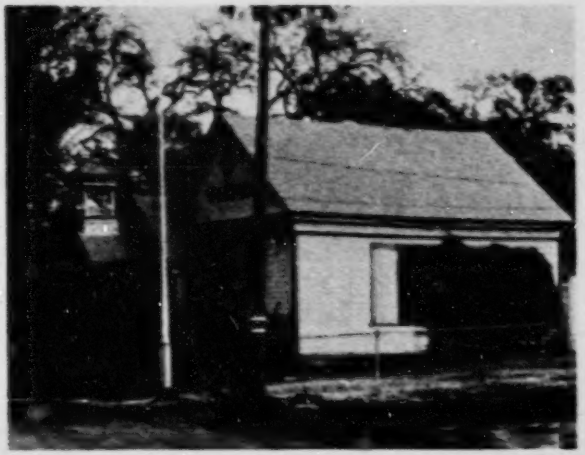
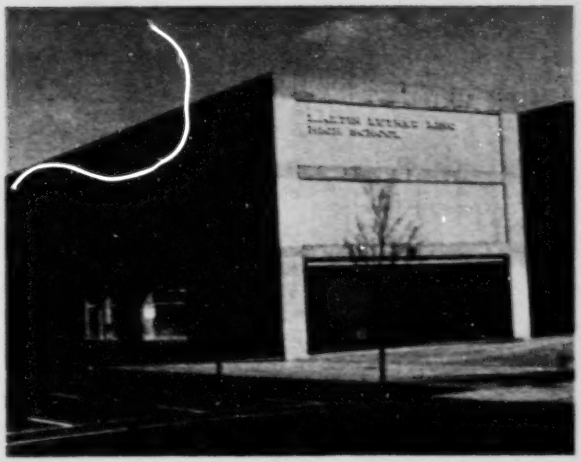
INTRODUCTION

Machado School was built in southern Santa Clara County, California, in 1895. As the story goes, three south county farmers were discussing the need for a new school when one of them, Bernard Machado, was prevailed upon to provide a few acres for the school. Within a few months, the wood-frame schoolhouse was designed, "raised" and in full operation.





Martin Luther King High School is located on Chicago's east side and was built in 1970. Discussion concerning the need for the new high school lasted several years and was the focus of dozens of school board meetings. Once the need was identified, special site and design committees were created, an environmental impact study was conducted, a bond election was held and an architect was commissioned. Three years later, the new high school was completed and in full operation.

Clearly the days of the instant schoolhouse are over. Today, educational planners are faced with a multitude of questions: What are the effects of redistricting? Rezoning? What new personnel requirements would result? Would there be a new ethnic distribution? What are the financial implications? The political implications?

Although educators have long desired to improve their ability to plan, they have not had use of the sophisticated management, research and evaluation tools now available to business and industry. There is a vast amount of knowledge concerning education. In most cases, however, this information is in small pieces and widely scattered like a giant jigsaw puzzle.

If public education is to meet the growing and varied needs of a rapidly changing and complex society, a system must be created which can piece together and communicate this information.

In 1970, a national program called Simu School was developed to create and implement such a system. A task force organized by the Committee on Architecture for Education of the American Institute of Architecture and the Council of Educational Facility Planners formulated a plan for use of simulation techniques in educational planning. The task force envisioned the creation of a national center for educational facility planning, with subcenters, or components, which could involve all of the people in a particular community in the process of planning future schools. Rather than a panacea, the project was seen by the task force as a path toward better planning.

The initial intent of Project Simu School was to develop a highly sophisticated simulation capability through a national coordinating center for educational planning, but work early in the project suggested that a single large-scale simulation procedure was not feasible and that facilities planning could not thus be separated from overall educational planning. Accordingly, the project was designed to work with local groups to develop planning "packages" to aid educational planners both locally and throughout the nation.

Moreover, early in the formulation of Simu School, it was decided that the project must operate on the "firing line" of education--in the "real world" and not in the isolated laboratory. For these reasons, each of the components was to be made responsible to a local educational agency for administration and (to some extent) for the particular focus of the efforts of the local units.

Funding which became available under Title III, Sec. 306 of the Elementary and Secondary Education Act allowed selected local educational agencies to become participants in the project. The initial component was begun in the Chicago school system. It was followed by a second component in Santa Clara County, California, and a third project in Dallas, Texas. Although not funded from the same source, a fourth component was established at Ohio State University to provide assistance to the Simu School project (see Appendix A).

Since their inception, each of the components has performed different functions and provided different tools: the Chicago Component has focused its efforts on the problems unique to the urban community; the Santa Clara County Component has worked to better the planning process in communities moving from rural to urban characteristics; and the Dallas Component has utilized existing computer capability to develop simulation models which will promote better

planning as well as more efficient operation in a variety of school systems. All three components, however, have worked toward the establishment of a National Center for Educational Planning.

A national center can serve as the focal point for assembling the work of the various developmental components and collecting a variety of services and information critical to educational planning. It could, in effect, be more than the whole of the component pieces, making available to the total educational community the assembled knowledge and products.

Pending the establishment of the national center, the executive office of the Council of Educational Facility Planners, International is performing some of the center's proposed functions. Its major service has been to disseminate news of Project Simu School's activities and available products to school districts throughout the world.

Project Simu-School A Network of Components

① Chicago Component
② Santa Clara Component
③ Dallas Component
④ Ohio State Component
⑤ Future Components
⑥ Support Members
⑦ National Center
• Future Participating Members

DALLAS

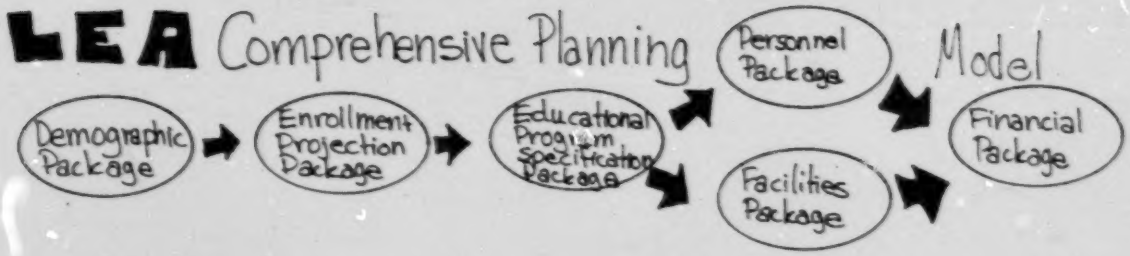
The Dallas Component of Project Simu School serves the Dallas Independent School District. The district has a total enrollment of about 170,000 students.

For its major objective, the Dallas Independent School District chose the task of developing simulation models of relevant aspects of curriculum development, student loading, staff and facility needs, and financial resource allocations.

Characterized by its tremendous computer capability, the Dallas Component has created a "family" of models designed to provide the answers to many of the questions being asked by the nation's educational planners--questions like these: At what point would a relatively new, growing neighborhood justify an elementary school? How does a neighborhood's changing from young families to middle-aged families to older citizens alter the school requirements? What affect do specific types of new construction have on enrollment?

The Enrollment Management-Budget Estimating package and A Food Management System are two of Dallas' products developed to date. Although specifically designed to maximize plant efficiency in a local Dallas district, both operational packages are transportable and can be used in a variety of school systems.

The major Dallas product, and perhaps the most valuable, is a pilot version of a Comprehensive LEA Planning Model. Constituting a resource of computer assists directly related to planning needs/functions of various administrative departments, this planning package is comprised of six components.



In order to field test the entire LEA package, component staff aided a local school district in building a master plan and validating a long-range building program. The town of Terrell, Texas, a bedroom community 25 miles southeast of Dallas, which was anticipating rapid growth in the coming years, had recently passed a bond issue for the construction of a new school. The first task of the LEA Model was to determine for which grade levels the new school should be built.

Using demographic analysis procedures, Simu School staff explored several potential patterns and rates of growth. After studying the growth rate of a neighboring and similar district, the land use group agreed that, for study purposes, a six percent annual growth rate was a reasonable expectation for Terrell.

The demographic data and a variety of census data, including dwelling yields and birth and fertility rates, were put into the enrollment model to generate a ten-year enrollment forecast by grade, by year. Looking at those projections and their relation to existing program helped staff and district administrators analyze several grade level organization alternatives.

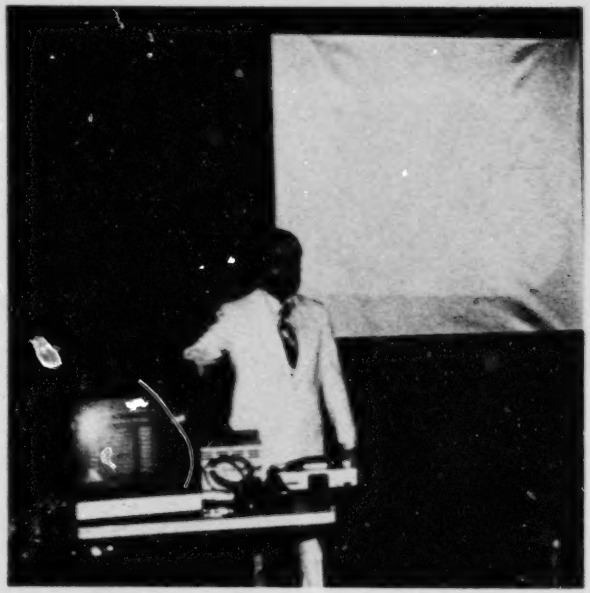
These alternatives were interfaced with personnel and facilities data to learn the answers to a series of "what if" questions. What if, for example, grades 6, 7, and 8 were grouped together? What new personnel requirements

would result? Would existing facilities, plus one new school, accommodate the changeover?

With a variety of options clearly visible, the school board was now able to come to closure on the type of school that was to be built. It was decided that a new junior high school would be constructed with the bond issue funds and that grade level policy would be changed so that sixth, seventh, and eighth grade students would attend the new school. With prudent use of portables, overcrowding in the elementary levels could thus be relieved, and no additional construction would be required for a number of years.

Using the financial model, the planning group obtained an overall projection of district needs based on input from all the models. Output from the financial model indicated that the bond funds were sufficient to achieve the building program needed to meet the special needs and projected growth of Terrell Independent School District.

In another field test, a single LEA component, the personnel package, was linked to a school district served by the Santa Clara County Component. The exchange assessed the transportability of the Dallas simulation package and, at the same time, offered the district some valuable predictive answers to its future staffing questions. This exchange is an example of the kind of interaction among components upon which the Simu School concept is based.



Another product, jointly developed by the Dallas, Chicago, Ohio State and Santa Clara County Components, is "A Data System for Comprehensive

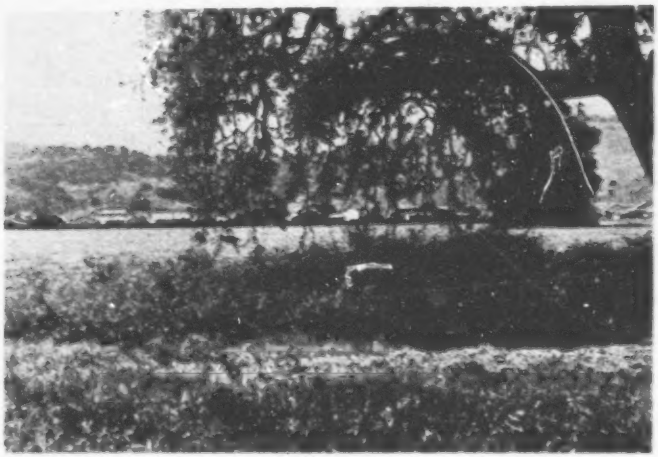
Planning in Education." The system involves the identification and delineation of 14 data "trees," ten of which relate to the school system and four to the community. In addition to providing for the storage and retrieval of all information needed for planning, the system stores and correlates all information which is input to, or produced by, the six models which comprise the LEA Model.

SANTA CLARA COUNTY

Unlike the Dallas and Chicago projects, the Santa Clara County Component serves an "intermediate administrative unit"--the county office of education--rather than a single district. Regarded as one of the fastest growing areas in the nation, Santa Clara County lies at the southern tip of San Francisco Bay and encompasses about thirteen hundred square miles.

The county school system, which has a current enrollment of close to three hundred thousand students, is comprised of 37 districts. Areas served by the districts range from urban, well-developed cities like San Jose--the county seat--to rural but rapidly growing towns like Morgan Hill and Gilroy.

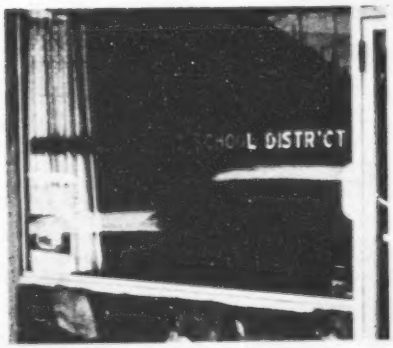
The Santa Clara County Office of Education chose as its Simu School objective the task of developing an improved set of processes, including simulation for educational and



school facility planning, that would enable parents, teachers, students, architects and various planning agencies to be involved in the decision-making process. It was also decided that special emphasis would be placed on the development of planning tools to be used in communities changing from rural to urban characteristics.

A major thrust of the Santa Clara County Simu School Component has been the creation of a "Community Profile" Model. The Model provides a framework in which a wide variety of data concerning a community is gathered from all available sources. Community members and appropriate planning agencies are brought together to study the data; and decisions based on the findings are made by the citizens themselves.

Over the past several months, the "Community Profile" has been field tested in a school district in the south county city of Morgan Hill. A small district with a current population of some 22,000 people, but one facing growth to perhaps 400,000 in the next 15 years, Morgan Hill Unified School District was in need of a long-range comprehensive master plan, and Project Simu School offered its assistance. In conjunction with the Planning Resources Office, a county project interested in housing patterns and their effect on education, simulation techniques for analysis of land use alternatives were developed and from them, enrollment projections were made.

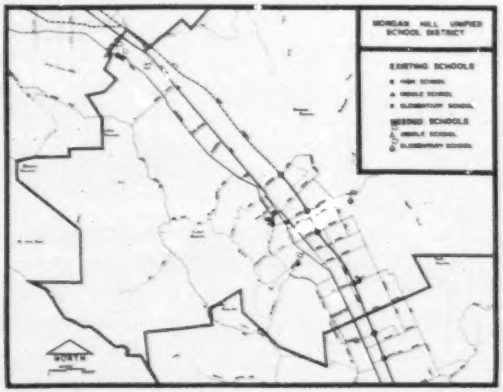


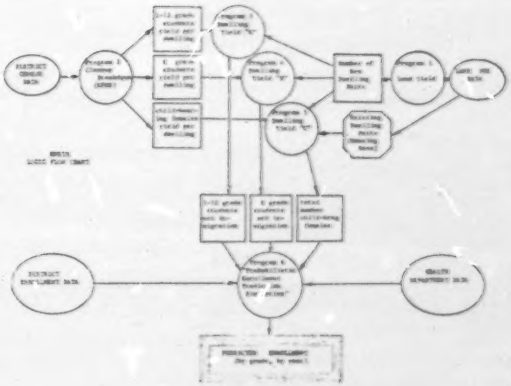
While the land use and enrollment simulation, shortened to ENSIM, was being conducted, a citizens' committee of knowledgeable Morgan Hill residents met weekly with Simu School, Planning Resources Office, and district staff to review existing facilities and programs, and later, to review and interpret the results of the demographic study. To increase citizen involvement, the committee, with the help of

Simu School, produced two tape/slide presentations aimed at informing the community of some of the key planning issues. Following both presentations, community questionnaires were distributed and analyzed by the citizens group.

One year after it was formed, the citizens' planning committee delivered to the Morgan Hill Board of Education a 20-year master plan that represented the combined efforts of trained professionals and committed, knowledgeable citizens. For its efforts, Project Simu School emerged with a new and dynamic set of planning tools, tested and ready to be shared with its sister components.

A second aim of the Simu School component in Santa Clara County is the establishment of a comprehensive data bank for use in future planning.





Currently, geocoding is being done by component staff, working with specialists from the County Planning Department, as is the identification of appropriate data to be collected in a census scheduled for the mid-70's. This data will eventually be integrated with the Dallas models to form a Data System for Comprehensive Planning.

A third task undertaken by the Santa Clara County Component is the establishment of an interagency Regional Center for Educational Planning. Initial cooperative endeavor with the county, city and regional planning

agencies has provided incentive to pursue the establishment of an organization which will integrate and coordinate available sources of planning data and technical assistance. Shared personnel will apply pooled expertise toward more orderly resolution of problems which cut across jurisdictional lines. The Planning Center will be organized to function as a continuing component in Project Simu School.

In the process of meeting its stated objectives, the Santa Clara County Component of Simu School has generated a number of planning related publications. Papers on subjects ranging from the decentralization of public education to housing patterns in relation to educational achievement have been made available to all who are interested. (See complete listing of Simu School publications in Appendix B.)

CHICAGO

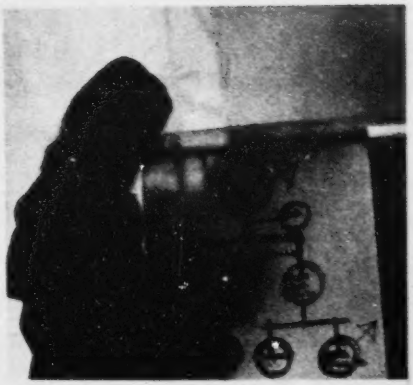
The Chicago Component of Project Simu School serves the Board of Education of the City of Chicago. Encompassing an area where the residential mile has saturated at approximately 25,000 residents, the Chicago Board of Education is responsible for the education of over one-half million students.

As society becomes more and more urbanized, the demands on its citizenry become far greater than ever before. And, as those demands grow in breadth and complexity, public education is called upon to perform a variety of new functions. Today's educational planners face the monumental task of providing quality education to large masses of urban students in the face of decreased revenues, soaring costs, shifting populations and changing educational programs.

To meet this challenge, the Chicago Component chose for its major objective the establishment of a center designed to investigate problems of urban educational planning and to assist local planning endeavors.

Chicago's Center for Urban Educational Planning has been active on five fronts.

In its research and development component, new procedures and techniques in such fields as cost benefit of alternative facility solutions, simulation, mathematical programming and systems analysis have been developed and evaluated. Also,



the center is involved in applied theoretical research in areas like optimal site and attendance zoning, enrollment projections and interior design layout.

The center's community involvement component is designed to bring a variety of people, laymen as well as experts, together in a joint effort to plan for new forms of education. Community involvement in major cities across the nation has been surveyed and assessed, cost studies of controversial planning decisions have been conducted, and workshops for community members, industry and business representatives, architects and school administrators have been held. A variety of techniques for community involvement, such as Delphi, simulation games and charrettes, have also been investigated.

Through its training component, the Center for Urban Planning has initiated on-the-job training for several students from local universities. This training is combined with course work offered for credit in cooperation with local universities. During the past year, several workshops have been held to explore ways of increasing cooperation between school systems and various public agencies to orient district staff who are about to occupy innovative facilities and to explore the mutual benefits of joint planning and cooperative ventures between business and industry and the public school system.

In the center's alternative planning strategies component, a number of new concepts have been investigated, such as alternative strategies for desegregation like redistricting, pairing, clustering, open enrollment and magnet schools. Center staff have also studied facility solutions such as schools in parks,

leased space, mobile units, shared facilities, year-round schools, extended school day and modernization of existing facilities.

Chicago's information resource component is comprised of a select library of published material on educational planning, a broad variety of visual aid material, and a management information system consisting of census data, school student data, and facility inventory. Component personnel have also planned a number of seminars and research reports on the latest experimental projects.

It is believed that the experiences gained in establishing the Chicago Center, as well as in testing processes and observing results, will serve as guidance for both the establishment of local centers such as Santa Clara County's Regional Center and the establishment of a major national center for educational and facility planning.

Project Simu-School A Network of Components

① Chicago Component
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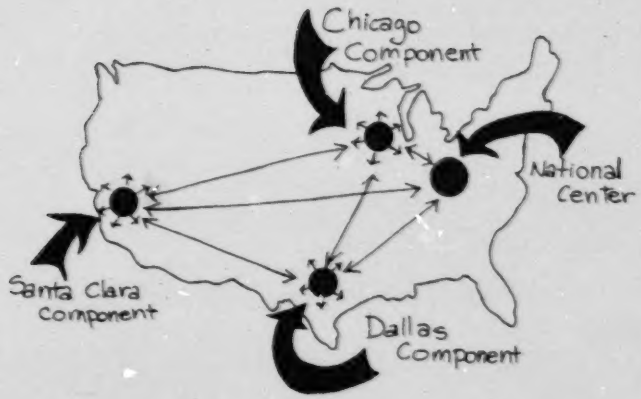
NATIONAL CENTER

Since its inception, Simu School has looked at the whole of educational planning, considering facilities planning as only a segment of the process. The commitment of a national center must be to total educational planning and to the dissemination of information to the total educational community.

Perhaps the greatest service that could be provided by a National Center would be to enable school districts around the country to share locally developed solutions to common problems. District administrators a thousand miles apart could benefit from one another's experience. A planning tool created in Maine could be used in Arizona. Existing developmental components, however, do not have the capabilities needed for the establishment and maintenance of such a system of nationwide sharing. Only through a national center could the total educational community take part in such an exchange.



Another, but equally important, objective of a national center would be to maximize the effectiveness, efficiency and efforts of all Simu School components by interfacing the most effective planning processes with the needs of all educational planners and decision makers.

CONCLUSION

Like planning itself, the development of tools and techniques is a time-consuming, costly process. The commitment of the U.S. Office of Education to the present date has totaled more than one million dollars--this, in addition to the uncounted contributions made by local participating agencies.

The planning packages developed to date by the individual components are a valuable addition to the techniques available to educational planners. Their value, however, will be fully realized when a national center begins the important job of bringing together the pieces of the planning whole.

APPENDIX A

Directory, Project Simu School, March 1974

1. Chicago Component

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Simu School Center for Urban Educational Studies
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Dr. Lester W. Hunt, Director, Project Simu School

3. Dallas Component

Dallas Independent School District
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Dr. Weldon Wells, LEA Representative, Deputy Assistant Superintendent
Dr. K. Ronald Higgins, Director, Project Simu School

4. Ohio State Component

Dr. Marion J. Conrad
Director, Project Simu School
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Chicago, Illinois 60601

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Vice President for Administration
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National Center for Educational Technology
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APPENDIX B

List of Publications from Project Simu School
January, 1974

The Chicago and Santa Clara County Components have undertaken the preparation of research reports and other documentation of planning processes. The publications available from these two components are shown below.

1. Chicago Component

Simu School: The Chicago Component, by Joseph P. Hannon, Donald J. Leu, and Ashraf S. Manji. 1971

A Simple Model of Student Flows in an Urban School System, Eric G. Moore. 1971

Simulation for Educational Facility Planning: Review and Bibliography, Ashraf S. Manji. 1972

SCHOOLSITE: A Game of Conflict Resolution in School Facilities Planning, Michael K. McCall, G. Scott Rutherford, and Margaret Skutsch. 1972

Simu School: Center for Urban Educational Planning, Joseph P. Hannon, Donald J. Leu, and Ashraf S. Manji. 1973

Planning for Future Forms of Education: Towards an Educational and Educational Facilities Planning Model, Donald J. Leu. 1973

Charretting the Planning Process, Harold L. Cramer and Robert J. Wehking. 1973

Delphi: Potential Uses in Educational Planning, Margaret Skutsch and Diana Hall. 1973

A Data System for Comprehensive Planning in Education, K. Ronald Higgins and M. J. Conrad. 1973

Orienting Users for New Facilities, Harold L. Cramer. 1973

Pupil-Need Oriented State School Finance System: The Hope of Large City Schools. 1973

Educational Facilities Planning in Chicago: Selected Case Studies, edited by Ashraf S. Manji. 1974

Systematic Planning of Educational Facilities, Carroll W. McGuffey. 1974

2. Santa Clara County Component

Simu School: A "Joint Venture" for Research, Development and Dissemination in Educational Planning, Lester W. Hunt. 1974

Decentralizing the "Future Planning" of Public Education, I.C. Candoli and Donald J. Lee. 1973

School Planning in a Historical Setting: Santa Clara County, California, Marcella Sherman and others. 1973

Housing Patterns in Relation to Educational Achievement, William Baker and Glenn Hoffmann. 1973

A Multi-Agency Center for Educational Planning, Don E. Halverson. 1973

A Career Development Center, Donald M. Foster and Rick Foster. 1973

A Data System for Comprehensive Planning in Education, K. Ronald Higgins and M. J. Conrad. 1973

Goal Analysis Procedures, Mark Garman and Jane Northall. 1973

A Futuring Primer for Local Education Agencies, O. M. Markley, Tom McCollough and Mary Moser. August, 1974

Educational Change and Future Forms of Educational Facilities, Donald J. Leu, G. W. Ford and Richard D. Cornish. July, 1974

ENSIM: A User's Manual for a Land Use/Enrollment Simulation Model, William Gilmore, Duane L. Bay, Morgan Woollett, Floyd Minana and Richard D. Cornish. August, 1974

Community Profile: A Comprehensive Base for Educational Planning, Lester W. Hunt, Richard D. Cornish and Educational Factors, Inc. August, 1974